



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

31780 7590 07/01/2003

ERIC ROBINSON  
PMB 955  
21010 SOUTHBANK ST.  
POTOMAC FALLS, VA 20165

EXAMINER

JACOBSON, TONY M

ART UNIT

CLASS-SUBCLASS

2644

455-306000

DATE MAILED: 07/01/2003

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/247,826	02/11/1999	KENICHI SHIRAISHI	0670-208	8094

TITLE OF INVENTION: METHOD FOR REMOVING AM NEIGHBORING INTERFERENCE AND A CIRCUIT FOR THE SAME

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1300	\$0	\$1300	10/01/2003

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
- B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or
- B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.
- ☐ Applicant claims SMALL ENTITY status.  
See 37 CFR 1.27.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE  
**Commissioner for Patents**  
**Alexandria, Virginia 22313-1450**  
**Fax** (703)746-4000

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)

31780 7590 07/01/2003

ERIC ROBINSON  
PMB 955  
21010 SOUTHBANK ST.  
POTOMAC FALLS, VA 20165

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above, or being facsimile transmitted to the USPTO, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/247,826	02/11/1999	KENICHI SHIRAISHI	0670-208	8094

TITLE OF INVENTION: METHOD FOR REMOVING AM NEIGHBORING INTERFERENCE AND A CIRCUIT FOR THE SAME

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1300	\$0	\$1300	10/01/2003

EXAMINER	ART UNIT	CLASS-SUBCLASS
JACOBSON, TONY M	2644	455-306000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 \_\_\_\_\_  
2 \_\_\_\_\_  
3 \_\_\_\_\_

## 3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) ☐ individual ☐ corporation or other private group entity ☐ government

4a. The following fee(s) are enclosed:

- ☐ Issue Fee  
☐ Publication Fee  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Commissioner is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

Commissioner for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature)

(Date)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMIT THIS FORM WITH FEE(S)



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/247,826	02/11/1999	KENICHI SHIRAISHI	0670-208	8094
31780	7590	07/01/2003	EXAMINER	
ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165 UNITED STATES			JACOBSON, TONY M	
			ART UNIT	PAPER NUMBER
			2644	5

DATE MAILED: 07/01/2003

**Determination of Patent Term Extension under 35 U.S.C. 154 (b)**  
(application filed after June 7, 1995 but prior to May 29, 2000)

The patent term extension is 0 days. Any patent to issue from the above identified application will include an indication of the 0 day extension on the front page.

If a continued prosecution application (CPA) was filed in the above-identified application, the filing date that determines patent term extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system. (<http://pair.uspto.gov>)

Any questions regarding the patent term extension or adjustment determination should be directed to the Office of Patent Legal Administration at (703)305-1383.



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/247,826	02/11/1999	KENICHI SHIRAISHI	0670-208	8094
31780	7590	07/01/2003	EXAMINER	
ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165 UNITED STATES			JACOBSON, TONY M	
			ART UNIT	PAPER NUMBER
			2644	5

DATE MAILED: 07/01/2003

## Notice of Fee Increase on January 1, 2003

If a reply to a "Notice of Allowance and Fee(s) Due" is filed in the Office on or after January 1, 2003, then the amount due will be higher than that set forth in the "Notice of Allowance and Fee(s) Due" since there will be an increase in fees effective on January 1, 2003. See Revision of Patent and Trademark Fees for Fiscal Year 2003; Final Rule, 67 Fed. Reg. 70847, 70849 (November 27, 2002).

The current fee schedule is accessible from: <http://www.uspto.gov/main/howtofees.htm>.

If the issue fee paid is the amount shown on the "Notice of Allowance and Fee(s) Due," but not the correct amount in view of the fee increase, a "Notice to Pay Balance of Issue Fee" will be mailed to applicant. In order to avoid processing delays associated with mailing of a "Notice to Pay Balance of Issue Fee," if the response to the Notice of Allowance and Fee(s) due form is to be filed on or after January 1, 2003 (or mailed with a certificate of mailing on or after January 1, 2003), the issue fee paid should be the fee that is required at the time the fee is paid. If the issue fee was previously paid, and the response to the "Notice of Allowance and Fee(s) Due" includes a request to apply a previously-paid issue fee to the issue fee now due, then the difference between the issue fee amount at the time the response is filed and the previously paid issue fee should be paid. See Manual of Patent Examining Procedure, Section 1308.01 (Eighth Edition, August 2001).

Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

# Notice of Allowability

Application No.

09/247,826

Examiner

Tony M. Jacobson

Applicant(s)

SHIRAISHI ET AL.

Art Unit

2644

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the original application filed 11 February 1999.
2. ☒ The allowed claim(s) is/are 1-3.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☒ CORRECTED DRAWINGS must be submitted.
  - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☒ hereto or 2) ☐ to Paper No. \_\_\_\_\_.
  - (b) ☐ including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the Examiner.
  - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

- |  |   |
|--|---|
| 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                             | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)          |
| 3 <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____             |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____               | 6 <input type="checkbox"/> Examiner's Amendment/Comment                             |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
|  | 9 <input type="checkbox"/> Other  |

Art Unit: 2644

## DETAILED ACTION

### *Drawings*

1. The drawings filed on 11 February 1999 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftsperson's Patent Drawing Review," PTO-948. In order to avoid abandonment of this application, correction is required in reply to the Office action. The correction will not be held in abeyance.

### INFORMATION ON HOW TO EFFECT DRAWING CHANGES

#### 1. Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may **NOT** be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

#### 2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

### Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.185(a). Failure to take corrective action within the set (or extended) period will result in **ABANDONMENT** of the application.

***Allowable Subject Matter***

2. The following is an examiner's statement of reasons for allowance:
3. Claims 1 and 2 recite a method and corresponding apparatus for removing neighboring interference in an AM receiver, comprising multiplying a received signal by a pair of signals having frequencies equally above and below the frequency of an interfering signal which is to be eliminated, respectively; filtering the resulting multiplied signals to remove high frequency components; subtracting one of the resulting filtered signals from the other filtered signal; and filtering the resulting subtracted signal to remove high-frequency components and obtain the desired AM signal.
4. Heinzmann (USPN 5,603,110) discloses a method and apparatus (Fig. 4) wherein the received signal is multiplied by a pair of signals having frequencies located equally above and below the frequency of an interfering signal. (A signal twice the frequency of the interfering signal and a signal of zero frequency are respectively above and below the frequency of an interfering signal by an amount equal to the frequency of the interfering signal.) The result of the multiplication is filtered to remove undesired frequency components produced by the multiplication, which may be low or high frequencies. Since the received signal is multiplied by the sum of the two signals having frequencies equally above and below the frequency of the interfering signal, respectively, in a single stage, and the subtraction is performed indirectly as a consequence of the 90-degree phase shifting of the generated signal prior to the squaring operation, Heinzmann does not include steps or means for separately

Art Unit: 2644

removing high frequency components from each of two multiplied signals, nor subtracting one of the resulting signals from the other to obtain a subtraction signal.

5. Muzzi (USPN 3,628,155) discloses a method and apparatus (Fig. 9) for intensifying a desired AM signal including the steps and means to multiply the received signal by a pair of signals spectrally located equally above and below the frequency of the desired signal, instead of an undesired signal as in the present invention, and the two multiplied and filtered signals are added so that the desired signal is reinforced, instead of being subtracted to cancel an undesired signal, as in the present invention.
6. Dilley (USPN 4,181,892) discloses an apparatus for eliminating broadband noise from a received RF signal, in which a received signal is multiplied by a pair of generated signals, however the pair of signals are not spectrally located equally above and below an interfering signal, rather one multiplying signal frequency is selected to produce a normal intermediate frequency signal as a difference frequency at the output of the corresponding multiplier, and the other is varied rapidly over the entire bandwidth of the input RF amplifier. The multiplied signals are filtered to remove high-frequency components (and low-frequency components) and the two derived signals (after being amplified and processed by energy detector circuits) are subtracted to produce the desired AM modulation wave.
7. Although the prior art cited uses structures or methods similar to recited in claims 1 and 2, the examiner finds no teaching in the prior art to combine or modify any of those references to produce the claimed invention.



Art Unit: 2644

8. Claim 3 recites a circuit for removing a pair of AM neighboring interference signals located symmetrically about a desired signal in an AM receiver, comprising (paraphrased) three local oscillators generating signals, the first and second of which have frequencies equally above and below the frequency of a first interference signal that is to be eliminated, respectively, and the third of which has a frequency equal to that of the second, plus twice the difference between the frequencies of the two interfering signals; three multipliers multiplying the input signal separately by the three generated local oscillator signals; three low-pass filters separately filtering the outputs of the three multipliers to remove high-frequency components from the outputs of the multipliers; a subtractor to subtract the outputs of the second and low-pass filters from the output of the first low-pass filter; and a bandpass filter to filter the output of the subtractor and eliminate frequency components located more than half the difference between the frequencies of the signals that were to originally be eliminated above or below center frequency of the (shifted) desired signal (which is now half the frequency of the lower-frequency one of the two original interference signals to be eliminated). The structure is basically that of claim 2, with the addition of the third local oscillator, multiplier, and low-pass filter and the replacement of the low-pass filter at the output with a band pass filter.

9. The circuit of claim 3 differs from the prior art in the same ways as indicated above regarding claims 1 and 2. The additional third local oscillator, multiplier, and low-pass filter elements further distinguish the invention of claim 3 over the prior art. While the method and apparatus of Heinzmann described above in regard to claims 1 and 2 is

Art Unit: 2644

capable of removing multiple interfering signals, the apparatus disclosed is substantially different.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. French et al. (USPN 4,864,643) disclose a system for eliminating adjacent channel interference or image frequencies in a radio receiver using well-known quadrature modulation techniques to produce a normal signal and a signal in which an interfering signal component is polarity-inverted, which can reject either a sum frequency or a difference frequency by selectively adding or subtracting the two modified signals.

12. Carson (USPN 5,134,723) discloses a system for enhancing the sensitivity of a radio receiver by canceling broadband noise, in which an input signal is processed separately through a normal channel and a noise channel and the resulting signals are subtracted after audio detection to remove a noise component. The multiplying frequency in the noise channel is selected to cause the noise channel to process an arbitrary portion of the spectrum near the desired signal, containing noise only, with the assumption that a broadband noise signal is similar in near portions of the spectrum.

Art Unit: 2644


13. Meyers (USPN 4,992,747) discloses a system for separating partially-overlapping FM signals by using successive phase-locked loop stages to capture (and simultaneously demodulate) a dominant signal, subtracting the captured dominant signal from the input to that particular stage, and supplying the subtracted signal to a subsequent stage for detection of the next dominant signal, and so on.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony M. Jacobson whose telephone number is (703) 305-5532. The examiner can normally be reached on Mon. -Fri. 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9315 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

tmj  
June 27, 2003

  
FORESTER W. ISEN  
SUPERIOR PATENT EXAMINER  
TECHNOLOGY CENTER 2600

**ALLOWED REVIEW****Application****Number**  
09/247,826**rt Unit**

2644

**Notice of****Allowance**  
01-Jul-03**Examiner**

JACOBSON, TONY

**Reviewer**

Bookbinder, Marc

**Omitted Rejections**

**Is there a potential clear error for omitting a rejection? (The rejection you propose must be reasonable)**

☐ Yes ☒ No

If yes, check all that apply

- ☐ 35 U.S.C. 102
- ☐ 35 U.S.C. 103
- ☐ 35 U.S.C. 112, first paragraph, written description
- ☐ 35 U.S.C. 112, first paragraph, enablement
- ☐ 35 U.S.C. 112, second paragraph
- ☐ 35 U.S.C. 101 (utility)
- ☐ 35 U.S.C. 101 ( non-statutory subject matter)
- ☐ Double Patenting (statutory, ODP)
- ☐ Other (e.g., Best Mode)

**RECEIVED**

AUG - 1 2003

DIRECTOR OFFICE  
TECHNOLOGY CENTER 2600

**ALLOWED REVIEW****Application Number**

09/247,826

**Notice Of Allowance**

01-Jul-03

**Reviewer**

Bookbinder, Marc

**SECTION XI. File Wrapper****Reasons for Allowance (R/A)**

Did the Examiner write a Reasons for Allowance (R/A)?

☒ Yes ☐ No ☐ N/A

If yes,

Is the R/A clear and complete?

☒ Yes ☐ No

If no,

Does the record as a whole indicate a R/A was necessary?

☐ Yes ☐ No

Comments:

--

**Interviews**

Was there an interview regarding the merits of the case relevant to the action reviewed?

☐ Yes ☒ No

If yes,

Was Summary Form PTOL-413 completed?

☐ Yes ☐ No

Is the record of the interview clear and complete?

☐ Yes ☐ No

Comments:

--

**Claims**

Were claims treated in an inappropriate manner on non-substantive issues?

☐ Yes ☒ No

If yes,

☐ claims are present that were not addressed.☐ claims previously withdrawn from consideration should have been cancelled.☐ improper dependent claims were not properly treated.☐ other

Comments:

--

**Sequence Rules**

Does the application contain nucleotide and/or amino acid sequences?

☐ Yes ☒ No

If yes,

Did the examiner properly handle Sequence Compliance Issues?

☐ Yes ☐ No

Comments:

--

**ALLOWED REVIEW****Application Number**

09/247,826

**Notice Of Allowance**

01-Jul-03

**Reviewer**

Bookbinder, Marc

**Section XIII. Other Issues**

Were all claims for priority properly treated?

☒ Yes ☐ No ☐ N/A

If a restriction was made, was it proper?

☐ Yes ☐ No ☒ N/A

Were all matters of substance in applicant's response and affidavits/declarations evaluated sufficiently?

☐ Yes ☐ No ☒ N/A

Other issues?

☒ Yes ☐ No

In claim 1, lines 12 and 13, the phrase "multiplied signals" appears to be misdescriptive. Removal of high frequency components as described occurs at the outputs of the multipliers 3 and 4 in fig. 1, for example. Note the detailed description at page 9, lines 2-7. The phrase "multiplied signals" refers in its plain meaning to signals that are or have been multiplied. This can only refer to the inputs of the multipliers, not the outputs. Therefore, it appears that the removal of high frequency components as claimed in claim 1, lines 12 and 13 occurs at the inputs to the multipliers. This does not agree with the description above. Perhaps the claim can be amended by changing "multiplied signals" to "signals resulting from said multiplying." Also, the original classification on the face of the file wrapper is confusing since two different original classifications are designated in two different locations thereon.

Comments:

ALLOWED REVIEW

<b>Application Number</b> 09/247,826	<b>Notice Of Allowance</b> 01-Jul-03	<b>Reviewer</b> Bookbinder, Marc
---	---	-------------------------------------

Bookbinder, Marc

## Section XIV. Indicia of Commendable/Outstanding

**Patentability Determination: Indicia of Commendable/Outstanding**☒ Yes☐ Yes☐ Yes

### Action Taking: Indicia of Commendable/Outstanding

☐ Yes☐ Yes☐ Yes**Patent Examining Function: Indicia of Commendable/Outstanding**

Check one of the following statement if applicable:

- ☐ The Office action is formulated to advance the prosecution, correct other informalities, and develop a complete file wrapper record. The Office action also is such that it leaves little room for improvement. The Office action clearly and concisely presents the positions taken.
- ☐ The entire Office action is complete and accurate and does not require any substantial revision. The Office action effectively conveys the positions taken.

Comments:

--

**ALLOWED REVIEW****Application Number**

09/247,826

**Notice Of Allowance**

01-Jul-03

**Reviewer**

Bookbinder, Marc

**Search****Initial Data Capture Points**

Was art provided from an ESS before first action?

☐ Yes ☐ No

Was any IDS improperly treated?

☐ Yes ☐ No ☒ N/A

Was a text search performed by the Examiner?

☒ Yes ☐ No

Was it non-patent literature?

☒ Yes ☐ No

Is the search strategy printout present?

☒ Yes ☐ No ☐ N/A

Was the inventorship searched by the Examiner?

☐ Yes ☒ No

If any TC or specialized art has identified specific search requirements in addition to or in exclusion of the above requirements, were these specific requirements complied with?

☐ Yes ☐ No ☒ N/A

Were foreign patent documents cited by the Examiner on an 892?

☐ Yes ☒ No

Were NPL documents cited by the Examiner on an 892?

☐ Yes ☒ No

Did the Examiner perform a new search in a 2nd/subsequent action?

☐ Yes ☐ No ☒ N/A

Did the Examiner update all searches in a subsequent action?

☐ Yes ☐ No ☒ N/A

Did an ESS submit a new search report in a 2nd/subsequent action?

☐ Yes ☐ No ☐ N/A

Was there new art found by the Examiner that was applied in a 2nd/subsequent action?

☐ Yes ☐ No ☒ N/A

Has a search been performed by the Reviewer?

☒ Yes ☐ No**Overall Rating of the Search**☐ Adequate☒ Less than Adequate

Comments:

It is noted that the class/subclass designated as the original classification on the file wrapper has not been searched. Note MPEP 904.02(a).